

Claims

1. A method for isolating ingredients from biological material, comprising the steps of:

- a) electroporating the biological material,
- b) separating off cell juice from the electroporated biological material,
- c) extracting the biological material, and
- d) obtaining the ingredients of the biological cell material in the cell juice and in the extract.

2. The method as claimed in claim 1, characterized in that the biological material in step a) is subjected to a high-voltage field in a conductive medium.

3. The method as claimed in claim 1 or 2, characterized in that, in step b), the separation of the cell juice from the biological material is effected by means of mechanical loading, preferably by means of tumbling.

4. The method as claimed in claim 3, wherein the mechanical loading of the biological material is always less than 2 MPa.

5. The method as claimed in one of the preceding claims, characterized in that step b) takes place in a screw, preferably in a full screw.

6. The method as claimed in one of the preceding claims, characterized in that, in step b), the biological material is supplied with auxiliary substances, preferably lime and/or milk of lime.

7. The method as claimed in one of the preceding claims, characterized in that step c) is carried out at a temperature of from 0 to 65°C, preferably of from 45 to 60°C.

8. The method as claimed in one of the preceding claims, characterized in that step c) comprises an alkaline extraction.

9. The method as claimed in one of the preceding claims, characterized in that the biological material comprises sugar beet (*Beta vulgaris*) and/or sugar beet chips.

10. A device for isolating ingredients from biological material, in particular as per as claimed in one of claims 1 to 9, exhibiting: at least one appliance for electroporating the biological material (1) as well as at least one full screw (5) for receiving the electroporated biological material.

11. The device as claimed in claim 10, characterized in that the at least one full screw (5), preferably its outer jacket and/or its screw threads, is perforated, in particular for the purpose of conducting away the cell juice which has been separated off from the biological material.

12. The device as claimed in claim 10 or 11, characterized in that the at least one full screw (5) is designed as a conveyor screw and the section of the screw which is designed for receiving the electroporated biological material is formed at a lower point, and the section of the screw which is designed for releasing the conveyed biological material is formed at an upper point, of a gradient which exists between these sections.

13. The device as claimed in one of claims 10 to 12, characterized in that an extractor (8) for extracting the biological material is additionally present.

14. The device as claimed in one of claims 10 to 13, characterized in that at least one metering device (6) for metering auxiliary substances is additionally present.